European University Institute

ROBERT SCHUMAN CENTRE FOR ADVANCED STUDIES

Issue 2019/20
November 2019

POLICY BRIEF

FSR TRANSPORT
Florence School of Regulation

Manifesto For the Next Five Years of EU Regulation of Transport

An FSR-Transport Vision for Advancing the Single European Transport Area by turning the Challenges of Decarbonisation and Digitalisation Into Opportunities

By Matthias Finger, Juan Montero and Teodora Serafimova

Highlights

- The recent renewal of the European institutions offers an opportunity for European regulation. While the new institutional composition will be in place for the next five years (2019–2024), the legislative and public-spending decisions made under the von der Leyen Commission will have implications for decades to come in terms of shaping the direction of the European transport sector.
- While the completion of the Single European Transport Area continues to be work in progress, new global challenges – namely climate change and digitalisation – are exerting additional pressure, but also offer new opportunities for the European transport sector.
- Climate change is set to be a central pillar of the next Commission mandate. Having pledged to deliver a 'Green Deal' for Europe in the course of her first 100 days in office, Commission President-elect von der Leyen reaffirmed her commitment to making Europe the world's first climate-neutral continent by enshrining the 2050 objective into law. Achieving this goal will require vast transformations across all sectors of the economy, including transport.
- Digitalisation, on the other hand, is adding a new layer of complexity onto transport; yet, if carefully regulated, it has the potential to advance EU sustainability objectives, while at the same time increasing efficiency, enabling smoother and more customer-oriented operations and, not least, enhancing safety.
- In this Manifesto, we show that the challenges of digitalisation and sustainability can be turned into opportunities for furthering the Single European Transport Area.
- In addition, digitalisation and sustainability are challenges far too big to be tackled only at national levels; both call for a truly European approach.
- Furthermore, neither challenge can any longer be addressed in an exclusively sector-specific manner; a resolutely intermodal regulatory framework will thus be in order.

Introduction

The hallmark and the very identity of the EU is the creation of a Single European Market. The free movement of people and goods is at the core of this Single European Market and mobility is essential to achieving it.

Over the past 35 years the European Commission (EC) has endeavored to further the mobility of goods and people in Europe by removing national barriers, by harmonising technical and operational standards and by creating intramodal competition in air transport, railways, roads, and waterborne transport.

This has been done mostly by way of a sector-specific approach, an approach which today however reaches its limitations, as mobility – both for passengers and freight – increasingly becomes multimodal. While the last Commission, and especially the outgoing Transport Commissioner Violeta Bulc, identified multimodality as the new frontier and challenge of promoting a Single European Transport market, the sector-specific approach still prevails and remains engrained in the institutional setup in both the market and its regulation, as well as in the organisation of the Commission itself.

Two new challenges – decarbonisation and digitalisation – have emerged ever more prominently and, so far, mainly in parallel to the unfolding of the Single European market. Both are increasingly being addressed by the Commission, with the Juncker Commission having already taken significant steps.

In the case of transport, decarbonisation and digitalisation are not only challenges –which can neither be addressed by the transport sector nor by the Commission alone –, but constitute significant opportunities for a much more integrated approach to mobility in the spirit of creating a single European transport market:

- Smart transport offers the opportunity to increase the economic and environmental efficiency of an integrated mobility chain for goods and people, and also offers new and more integrated mobility services to citizens and customers; and
- Addressing sustainability offers the opportunity for a much more harmonised approach to pricing the mobility of goods and people by internalising external costs in a systematic and more environmentally efficient way, while providing economic incentives to green transport modes such as railways.

The year 2019 is a decisive one – not only in terms of determining the EU's political leadership and priorities for the next five years, but also in shaping the regulatory approaches and outcomes within the transport sector for the foreseeable future beyond the von der Leyen Commission's mandate. This Manifesto shares our vision for how to further the Single European transportation area for goods and people by turning the challenges of smart transport and sustainability into as many new opportunities for efficiency and competitive services.

S1 | SINGLE EUROPEAN TRANSPORT AREA

Back to Basics: The Vision of a Single European Transport Area

Transport is a central pillar of European integration and a key pre-condition for the creation of the European Single Market. The development of seamless and efficient transport services and infrastructures across Europe is key to fulfilling three of the four freedoms of the common market: the free movement of people, services, and goods. The overarching goal of the European Union is the creation of a Single European Transport Area and the completion of the Internal Market for the transport of goods and passengers. This was outlined in the 2011 White Paper. Corresponding activities of the European Union date back to the Treaty of Rome (1957) and have mainly been undertaken thanks to a sector-specific approach; that is, transport mode by transport mode.

The transport sector is facing increasing pressure as a result of global challenges such as climate change and digitalisation, which in turn calls for the uptake of new technologies and mobility solutions, as well as for a rethinking of some of the current regulatory approaches. The historical challenge for the EU transport sector has been, and remains, the elimination of barriers between nations. More precisely, there is the challenge of harmonising the historically national approaches to land transport, something that is still most clearly visible in the railway sector. Such harmonisation pertains to technical and operational matters (interconnection and interoperability), to financing and to the institutional setup, as they all have the potential to lead to market distortions inside and across different transport modes. It is clear that a lot of work remains to be done and substantial financial resources to be committed for the elimination of bottlenecks and for the harmonisation and interoperability of the legacy national infrastructures.

The basic EU approach to creating a Single European Transport Area has been to distinguish the infrastructures from the services provided based on these infrastructures; this is also referred to as "unbundling".

Intramodal competition has been introduced in the provision of transport services. National state-owned monopolies providing integrated transportation have started to disappear, at least in some sectors. Newcomers have entered the transport markets: they are both former national monopolies expanding across borders and new entrants from other transport sectors or even other industries. As a result, transport services providers are becoming more efficient and more responsive to users' needs and have lost their ability to balance positive and negative network effects. European markets, well integrated in global markets, are emerging in aviation and maritime transport. Railways remain very national, but are catching up fast. Urban public transport has not been greatly affected by the reform of European transport.

There is still room to improve intermodal competition in the Single European Transport Area. The reform of the railways sector is subject to implementation; its impact – either positive or negative – has yet to be observed. There are continuous threats to intramodal competition in the aviation and maritime industries. While EU legislation does govern some aspects of urban mobility, such as green public procurement (as laid down in the recently revised Clean Vehicles Directive), the subsidiarity principle ensures the ability of Member States to take legislative actions and decisions. As a result, the Commission has been shy to intervene in new urban mobility solutions and shared mobility.

However, the most fundamental challenges to the Single European Transport Area remain the monopolistic infrastructures. This is unsurprising given that competition can only play a very limited role here, given that these are natural monopolies (such as railway tracks). While the picture can vary significantly depending on the Member State and the transport mode, as well as depending on how the collected revenue from the customers is apportioned to the use of the infrastructure, it is obvious that many infrastructures require financial support when it comes to their expansion, not simply for their operations. This, in turn, means that national budgets have to contribute, most notably in rail, but also in road infrastructures.

The Connecting Europe Facility (CEF) supports investment in transport, energy and digital infrastructure through the development of the Trans-European Networks (TEN) and also promotes cross-border cooperation on renewable energy generation. Those networks and cross-border cooperation are crucial for

the functioning of the Single Market and also strategic to implementing the Energy Union, the Digital Single Market and the development of sustainable transport modes. It is fundamental to underline the strategic importance of the CEF programme from the perspectives of integration of the internal market, smart mobility and the opportunity to deliver tangible added value for citizens, social cohesion and business through this programme, prosperity and added value for EU as a whole.

The future needs for decarbonisation and digitalisation will imply a growing convergence of the transport, the energy and the digital sectors. Synergies between all three sectors should thus be harnessed to the full extent, maximising the effectiveness and efficiency of EU support. Investment in digital, innovative and sustainable transport projects must be accelerated in order to move towards a greener, truly integrated, modern, accessible-to-all, safer and efficient transport system. Social cohesion at EU level is to be enhanced by increasing the public investments in EU and regional added-value projects. The completion of TEN-T core network by 2030 and the transition towards clean, competitive, innovative and connected mobility, including an EU backbone of alternative fuels charging infrastructure by 2025 should be a priority. Multimodal and cross-border connections are of great importance in this regard. Priority should be given to large-scale EU-wide projects so as to digitise transport such as ERTMS, SESAR and autonomous driving. The 5G coverage of the TEN-T would be equally fundamental. To realise these projects, a blending of resources is needed: public funds from the CEF and private funds guaranteed by InvestEU.

It is estimated that the completion of TEN-T core network will generate 7.5 million job-years between 2017 and 2030 with an additional GDP increase of 1.6 percent in 2030. CEF shall prioritise investments on TEN-T cross-border infrastructures to achieve coherent capacity and avoid bottlenecks in all modes of transport, but in particular the greenest rail and waterborne, in order to obtain a fully integrated transport network. CEF aims for transport to contribute to the completion of both layers of TEN-T: the core network by 2030 and the more extensive layer by 2050. Investing in transport, and in particular in the TEN-T infrastructures, the upgrading and maintenance, is crucial for Europe's growth, jobs and long-term goal of decarbonisation.

The CEF Transport Blending call, launched in 2017, has supported actions combining CEF grants with financial instruments (€1.35 billion), thus encouraging the participation of the private sector in the funding of CEF actions. The second Blending call, worth €350 million, as well as a call in 2018 (€421 million), have helped further the Commission's priorities along the EU transport policy agenda in terms of decarbonisation, inter-modality, road safety, and digitalisation. When it comes to the financing of infrastructures, an achievement of the Juncker Commission has been the adoption of the new EU budget for the Multi-Annual Financial Framework for 2021–2027, whereby €30 billion was allocated to the CEF program. The new CEF will rightly prioritise environmentally friendly modes of transport, such as rail and the development of charging infrastructure for vehicles using alternative fuels. In parallel, the Commission's work on the development of an EU-wide methodology for the assessment of "socially and environmentally sustainable" economic activities will be a key complementary instrument for channeling scarce financial resources towards future-proof transport technologies. As an enabler for railway transport, ERTMS funds shall be provided to ensure that the Core Network Corridors will be equipped with ERTMS by 2030 and the entire TEN-T network by 2050.

Despite clearly observable best practices (such as the Shift2Rail programme) and the EU's modal shift objectives, rail freight services are often still characterised by relatively low quality and reliability. As a result, rail freight's modal share today has stagnated at around 17 percent, significantly below the 30 percent aimed for by 2030. This can be attributed to the lack of cooperation for instance in the context of cross-border coordination in capacity offerings, traffic management, and planning of infrastructure expansion. The lack of fair intermodal competition has certainly been a cause for the slow uptake of customer-oriented services and innovative business models. Technical and operational interoperability barriers will need to be overcome in order to increase the share of freight that is transported by rail, as opposed to trucks. Moreover, standardisation will be crucial for reducing costs as well as for improving process efficiency.

Furthermore, the lack of harmonisation along the logistics chain and across the different transport modes also stems from numerous administrative barriers. Digitalisation and cooperation certainly have the potential to improve

operations, to enhance customer experience, and to increase capacity, for example along rail freight corridors. However, unleashing the full potential of digitalisation will require a change in the way the entire logistics chain is organised and managed.

As competition plays a limited role in the governance of infrastructures, regulation serves as a substitute to improve their performance. In the past, the Commission has mostly focused on sector-specific regulatory frameworks. Despite being based on common principles, important differences in regulation exist and will remain across transport modes. However, differences also remain within the sectors across the Member States due to their reluctance to accept and enact EU regulations. This can also be attributed to high system complexity as well as the fact that a one-size-fits-all approach is not always feasible.

Also, the regulation of the infrastructures remains closely tied to the national and even local territorial development strategies. Authorities and citizens have mostly accepted markets when it comes to transport services, but they remain reluctant when it comes to infrastructures in a given territory. In air traffic management (ATM), for example, national sovereignty concerns are clearly an obstacle to the creation of a Single European Sky. Therefore, completing the reform of the different transport infrastructures is of fundamental importance, as transport service providers sometimes cannot really compete because of the rigidities in their underlying infrastructures.

The Limitations of The Traditional Approach

While the story of the reform of European transportation is one of success, the limitations of the overall approach of the past 35 years start to become apparent. Firstly, there are clear signs that European champions are not really emerging in the various transport modes. While it is true that some traditional monopolists are expanding across their national borders, they are not reaching a European scale, either through organic growth or through mergers and acquisitions. This is not specific to the transport sectors; it can also be identified in telecoms and banking, for example. The same can be said for manufacturers serving the transport industries. While Airbus is a success story, no parallelism exists in railways, maritime, or road transport. The frustrated Alstom-Siemens merger raises the question whether such an evolution is even desirable.

Secondly, no homogenous European markets have emerged in transportation. Aviation, along with international road freight and maritime transport, could be considered as exceptions. Still, even in air and maritime transportation, and certainly in railways and roads, national regulatory conditions remain different, mostly state-owned players tend to stay national (particularly when it comes to infrastructures), and markets continue to be fragmented. Not to mention the fact that urban public transport continues to be a fully national, if not local "market".

Thirdly, perfect unbundling seems to be increasingly challenged by recent technological developments, particularly digitalisation. As a result of imperfect unbundling, but also as a result of various national (industrial) policies, (cross-)subsidies continue to lead to unsatisfactory market situations in most of the transport sectors and in many of the EU Member States.

Fourthly, the sector-specific approach promoted during the past 35 years by the Commission seems to be reaching its limits, considering that passengers and shippers are increasingly requesting a more integrated approach along the respective value chains. Thus, transport can no longer be treated in a sectoral way only, and must now also be approached as an integrated system, the aim of which should be to deliver door-to-door (mobility) solutions to its users, both passengers and shippers. At the same time, users cannot be asked to coordinate these different transport modes, nor can this task be left to expensive and often inefficient intermediaries.

Consequently, European regulation must be enacted in order to better coordinate the transport modes. More homogenous rules across transport modes, as in the case of multimodal passenger rights (and transport providers' liabilities), will be needed where possible. Incentives for multi-modality and a better physical interconnection across transport modes would certainly also help.

Such enhanced coordination of incentives could deliver a more seamless and more efficient EU-wide transport system, given that sector-specific policies can and often do lead to contradictory incentives and thus suboptimal outcomes. While sector-specific regulation has been instrumental in securing compliance at the international level (for example, IMO targets in the maritime sector),

it should be noted that a purely sectoral approach can also make it difficult, if not impossible, to identify and therefore to incentivise the most efficient and sustainable transport mode along the value chain.

Interconnected Digitalisation and Sustainability as New Opportunities for Accelerating the Single European Transport Area

While the Commission continues to face significant challenges to complete the Single European Transport Area, new challenges and opportunities are emerging. At first sight, it would appear that interconnected digitalisation is introducing a new layer of complexity into transport, while sustainability and decarbonisation objectives require some major changes in the way transport will have to operate.

However, we believe that both digitalisation and sustainability offer just as many opportunities when it comes to building the Single European Transport Area. Also, both digitalisation and sustainability are at least regional in nature, which means they cannot be tackled at local or national levels alone. Consequently, given its continental reach and the depth of its regulatory competences, the Commission is optimally positioned to ensure that interconnected digitalisation and sustainability contribute to the Single European Transport Area.

Furthermore, neither interconnected digitalisation nor sustainability are challenges that can be addressed by a purely sector-specific approach and require at least an intermodal, if not a totally cross-cutting, approach. Therefore, we propose to identify digitalisation (*Smart Transport*) and sustainability (*Sustainable Transport*) as the two new opportunities to accelerate the Single European Transport Area. Both have the potential to overcome the limitations that have emerged after 35 years of European transport reform, and it is to this that we turn in the following two sections.

S2 | SMART TRANSPORT

Interconnected Digitalisation: The Pre-Condition for Automation and Smart Transport

New technologies are transforming the transport sector. Digitalisation and artificial intelligence (AI) have the power to automate certain operations and to better coordinate transport across service providers and transport modes. Technology creates opportunities to increase efficiency for the benefit of the user and the overall competitiveness of the European economy, to increase safety, and to reduce CO_2 emissions. Furthermore, technology provides new instruments to accelerate the Single European Transport Area.

A new data layer is emerging on top of the traditional infrastructure and transport service layers. Digitalisation is the process of creating this data layer, which involves the production of data on transport, the transmission of such data, and the processing of the data.

Firstly, sensors are being installed in infrastructure, personal and cargo vehicles, as well as passengers; for example, in the form of smartphones and location chips to sophisticated meters, and electronic charging tools. All these elements produce data. The Commission can accelerate the installation of sensors through different means, including the compulsory installation of sensors (as has been the case with meters in electricity networks), and funding, as in the digital projects in the Connecting Europe Facility (€3.8 billion in the previous Commission). This is increasingly drawing attention to the need to ensure privacy rights, which is also linked to the question of data ownership (that is, should passengers/users of infrastructure own the data they generate?).

Secondly, data has to be transmitted from locations around the territory where infrastructure is displayed, to the centers where data is to be processed. Connectivity is a challenge as transport infrastructure and vehicles can be located in remote areas: high seas, in the air, etc. Different technologies are available to ensure connectivity, ranging from optic fiber to mobile networks (in particular 5G), WIFI, and satellite networks. Again, the Commission is playing a role in improving the connectivity of transport infrastructure and vehicles.

Thirdly, data has to be processed in order produce useful information that is incorporated into processes and to automate services. AI and machine learning are fundamental tools to make smart transport a reality. The Commission is taking a leading role in AI, and transport needs to be an integral part of this strategy.

Smart transport and automation will be the result of further digitalising transport: creating, transmitting, and processing transport data. Automation of each transport mode, with the leading example of the autonomous vehicle, requires the best connectivity and data processing in the form of machine learning. The Commission has an important role to play in the development of automated vehicles by supporting research, improving connectivity around Europe, and eliminating regulatory obstacles (including testing environments in close collaboration with Member States). Automation in the coordination of transport modes, particularly in urban areas, is the response to congestion and emissions. Mobility-as-a-Service (MaaS) can benefit from the support of the Commission in terms of improving the flow of data.

However, a fundamental obstacle for smart transport in Europe is fragmentation. Many actors need to coordinate in order to fully digitalise transport. Markets have become increasingly fragmented as a result of liberalisation: horizontally, newcomers compete with incumbents; vertically, infrastructure managers are separated from transport service providers (airports/airlines, ports/shipping companies, etc.), sometimes as required by regulation (railways). Finally, fragmentation across Member States is a further obstacle in the European Union.

In general, actors are reluctant to coordinate their digitalisation strategies, which in addition to the associated high upfront costs can stand in the way of digitalisation. As data is presented as the new oil, players are hesitant to share it with other players, fearing that they might be eroding their position in the market, thus blocking the digitalisation of the transport sector. Infrastructure managers with strong market power, sometimes even monopolistic positions, seem particularly reluctant to share their data.

Sharing Data Among Existing Actors: Standardisation, Interoperability and Cooperation

The Commission is playing a fundamental role in the promotion of transport digitalisation by facilitating the flow of data across actors in all transport modes. Different instruments are being used. Firstly, traffic flows are facilitated if common standards are defined for the exchange of data. Every actor is developing its own stream of data out from their assets and activities. Sharing this data might not be useful, as raw data is difficult and expensive to manage. In complex and highly fragmented sectors it is difficult to agree on common standards to exchange data, particularly across multiple Member States. A traditional role of public authorities is to facilitate the creation of common standards in network industries, and standards for the exchange of data are no exception. The Commission has a role to play in the definition of standards, including quality of data standards.

Secondly, the sharing of data might have to be imposed on actors that are reluctant to participate in the exchange of data. These might hesitate to take the cost of creating data exchanges as they see no immediate direct benefit for them. In fact, some players might think that sharing data will actually weaken their competitive position against other market players. Here, the Commission has a role to play in defining such obligations, and at the same time in striking a balance between the general interest and the legitimate business interest of the market players.

To promote interoperability in the railway single market and digitalise rail transport, it is fundamental to accelerate the implementation of ERTMS. Taking into consideration the current very slow pace of deployment of ERTMS along the corridors as well as the lack of EU grants, insufficient to cover the entire costs, the financing aspect for ERMTS completion is indeed critical.

The implementation of ERTMS is key to improving cross-border connections, increasing international freight and passenger capacity, delivering higher reliability rates, opening up the supply market, and most critically improving standards of safety. By improving rail sector competitiveness, ERTMS can also help to level the playing field between rail and road and ultimately provide significant environmental gains, with passengers and freight moving from road to rail.

With the support of private investors and public funds, an EU-wide large-scale project is estimated of around €100 billion to fulfill such a goal.

The Commission has launched initiatives in all transport modes to facilitate and, where necessary, impose data sharing. These include National Access Points under the ITS Directive, European Maritime Single Window, electronic freight documents, smart tachographs, Digital Inland Waterway Area, and SESAR projects in the air transportation industry. This is only the beginning, as a lot of room remains for further improvement of data flows in EU transport through standardisation, interoperability, and compulsory data sharing. The uncertainty in the application of antitrust law might limit the willingness of actors to cooperate more efficiently.

New Market Structures: An Opportunity for The Single Market

Digitalisation has the power not only to improve efficiency, but also to transform market structures. The traditionally separated transport modes can be transformed into multi-sided markets coordinated by digital platforms. Technology has the power to overcome fragmentation. Digitalisation reinforces multi-modality and, more importantly, represents an opportunity to accelerate the Single Market.

Platforms operate in the data layer. They facilitate the interaction between different sets of actors, reducing transaction costs and creating new network effects. Transport platforms active in the data layer are in a position to design new and creative interactions within a sector as well as across transport sectors. Technology can be used to better coordinate isolated pieces of the transport puzzle, with a major impact on efficiency, safety and emissions.

Firstly, transport platforms can substantially increase efficiency across existing transport sectors. Thanks to predictive algorithms, they can empower a better use of the existing assets, increasing capacity without further investment. They can better adapt traffic flows in order to avoid congestion, thereby helping to mitigate air- and noise-pollution issues in urban environments. Efficiency increases in each transport mode, and the promotion of the more environmentally sustainable transport

modes can help advance the European Commission's sustainability and decarbonisation objectives.

Secondly, platforms can make multimodality a reality by more efficiently coordinating different transport modes. Platforms can have access to the available information in real time to better integrate different transport modes. They can eliminate friction in the form of integrated information and ticketing for the user. They can provide alternatives if a connection is lost.

Thirdly, platforms can provide users with a seamless mobility experience across Member States, reinforcing the Single Market. By now, the challenges of the construction of the Single Market have become obvious, given the high costs involved in harmonisation and rendering infrastructure fully interoperable. There is political reaction to harmonisation of rules that seek to set common standards for services across Member States. Moreover, there are unavoidable obstacles such as different languages and traditions in the way information is displayed and passengers interact with service providers. Finally, the emergence of EU-wide service providers is far from being realised in most transport modes.

Digitalisation, and platforms in particular, provide a complementary tool for the creation of the Single Market. It is not always necessary to fully harmonise service conditions, or to wait for European players to provide services across the EU. Platforms can build a network of networks, a frictionless coordination of fragmented services across Member States, empowering citizens and companies to use transport services across the continent. Thus, digitalisation can become the ultimate tool for the completion of the Single Market.

The Regulation of Transport Platforms

While platforms represent an opportunity, they also pose regulatory challenges. The Commission has a leading role in facing these challenges and transforming them into opportunities for the completion of the Single European Transport Area.

As platforms grow larger ecosystems around them, the value created by network effects increases, which reinforces the position of platforms as system coordinators creating and distributing such value. The services being intermediated by the platform become commodified, the position of the service providers is eroded as they lose the direct relationship with the passenger/cargo dispatcher, competition becomes more intense, and traditional players might face challenges to even fund their operations.

All players are becoming strategic when it comes to data sharing. Traditional players are increasingly resistant to sharing data because it helps platforms transform transport markets into multi-sided digital markets, where platforms coordinate commoditised transport service providers. Some traditional players are trying to vertically integrate in order to become the platform coordinating the market, using their position in the service layer as a competitive advantage.

Platforms are increasingly demanding that public authorities impose data sharing obligations on traditional players, so as to exclude strategic behaviors to reinforce the position of traditional players against new platforms. The Commission is fully aware of these dynamics and has the responsibility to ensure a level playing field. No regulatory obstacle should be introduced that hampers the construction of multi-sided markets when they are in the position to deliver smart transport and increase efficiencies. At the same time, it does not seem reasonable to unbalance the playing field in favor of newcomers.

Data sharing can and should be a two-way street. Entities that are forced to share data could be repaid with the new data generated by the data provided. In this way, digital platforms benefiting from data from traditional players would provide such players with the new and powerful data generated by the digital platforms.

In any case, it should be recognised that building a platform is a business in itself. Attracting partners to an ecosystem by sharing the potential value created by network effects is the fundamental business proposition of the digital platforms. The platforms that should succeed are those with the best technology, which are capable of identifying the right incentives for partners and creating a sustainable ecosystem. Regulation can solve market failures, but should not favor inefficient platforms by forcing market players to partner with them.

Furthermore, regulation should allow alternative platform arrangements, such as platforms managed by public authorities and decentralised platforms managed

by the transport service providers intermediated by a platform.

As transport is platformed, it is the role of the public authorities to ensure fairness in the relationship between platforms and transport partners. Platforms that reach certain thresholds in size or market power must ensure transparency and fairness in their algorithms, providing redress mechanisms in case service providers have concerns with the functioning of the platform. Platforms are not neutral; they often face conflicts of interest, particularly as they vertically integrate and as they both intermediate and provide some of the intermediated services in competition with other service providers. The Commission is the world leader in platform regulation, particularly in the regulation of fairness in platform to business relationships. As transport is platformed, specific measures to regulate transport platforms might be considered.

Finally, transport is a service of general economic interest, but digitalisation might have negative impacts on the general interest. Platforms might reinforce transport modes damaging the environment, they might reduce the availability of services in scarcely populated areas, or they might reduce the funding available for the constructions and management of the underlying infrastructure they intermediate. Public intervention might be necessary in the future to ensure that the intermediation activity of the platforms does not damage the general interest.

In this regard, special attention must be paid to the social impact of transport platforms. On one hand, platforms empower small companies and even individuals to enter transport markets and compete with more established players. On the other hand, platforms increase competition between the service providers intermediated in the platform. As a result, platforms can trigger a 'race to the bottom' in the conditions of provision of services by individual and small companies. The new and particularly weak position of these actors has to be protected.

The Commission is already in a leading position in the regulation of platforms, given that it has the knowledge and the scale that local and national authorities often lack. It has the necessary legal base (freedom to provide services). Transport should play a larger role in the regulation of platforms. Transport already provides some of the leading examples of data-sharing frameworks and even one of the very first platform regulation examples (the Code of Conduct for Computerised Reservation Systems in aviation). The construction of the Single Transport Area could be one of the drivers of platform regulation in Europe.

S3 | SUSTAINABLE TRANSPORT

Bold Ambitions Should Be Met With Correspondingly Bold Measures

In its Long-Term Decarbonisation Strategy "A Clean Planet for All", the European Commission paints a clear picture of the vast transformations that will have to take place across all sectors of the economy for Europe to reach net-climate neutrality by mid-century. More recently, in her Agenda for Europe "A Union that strives for more", newly elected European Commission President Ursula von der Leyen reaffirmed her commitment to making Europe the world's first climate-neutral continent by enshrining the 2050 objective into law, and proposed a tightening of the EU's 2030 emission reduction targets. Moreover, the Political Guidelines state that Europe needs to move towards a zero-pollution ambition. The European Green Deal, which the von der Leyen Commission has promised to deliver within its first 100 days in office, is set to elaborate policy measures to implement the aspired 2050 goal and thus offers new momentum to come up with a concrete decarbonisation strategy. For transport, which accounts for a quarter of the Union's total greenhouse gas emissions and is a major contributor to health-damaging air and noise pollution in cities, translating these objectives into reality will require a systems-based approach with significant changes across all transport modes.

However, regulators' experience has shown us that transport is a particularly challenging sector when it comes to decarbonisation. It continues to be largely dependent on oil for most of its energy needs and is the only EU sector whose emissions remain higher than in the 1990s. In the long run, this is both environmentally and economically untenable. Growing recognition of this situation, as manifested through the 'green wave' in the recent European Parliament elections, has resulted in the building of an overwhelming consensus regarding the need to shift away from business-as-usual and towards a more socially and environmentally sustainable system based on shared, multi-modal, and low-carbon mobility.

Firstly, it should be acknowledged that some positive developments were observed under the Juncker Commission (2014–2019) towards establishing a conducive regulatory and financial framework to unleash the considerable untapped potential in the transport sector. This has come in the form of three consecutive Mobility Packages towards the attainment of a modern, multi-modal, safe and low-carbon transport sector; these packages were marked by many firsts in terms of transport regulation.

Among these were the adoption of the EU's first-ever CO_2 standards for heavy-duty vehicles, along with an incentives system for the production of low- and zero-emission trucks. Another was the introduction of binding requirements for the installation of charging infrastructure for electric vehicles in buildings. On the aviation front, examples were the inclusion of air transport in the EU Emission Trading Scheme and the introduction of ICAO's global market-based mechanism (CORSIA), which is set to offset the growth of sector's CO_2 emissions from 2021 onwards. In shipping, on the other hand, we saw the adoption of the IMO's landmark sulfur cap in late 2016, which will significantly limit the allowable sulfur content of shipping fuel from 2020. However, a number of gaps remain to be filled in order to place transport on a firm path to carbon-neutrality by mid-century.

With this in mind, and given the long-lasting effects of EU legislative- and public spending-outcomes, the next five years of EU regulation will be decisive in determining the feasibility of the aspired mid-century objectives. Consequently, the von der Leyen Commission is responsible for mainstreaming policies and guiding investments towards transport technologies compatible with sustainable and climate-resilient growth.

Transport's External Costs Should Be Internalised In a Socially Just Manner

It is widely acknowledged that personal and goods transport entail a significant societal and economic cost in the form of environmental and human health impacts, but also accidents, congestion, and infrastructure wear and tear. However, these costs are largely unaccounted for in the price that transport users pay today and are thus 'external'. In fact, a recent study by the European Commission estimated the overall size of transport-related external costs to be around €1 000 billion annually, the equivalent of 7 percent of EU28 GDP,[1] whereas users are only paying for roughly half of these

1. https://ec.europa.eu/transport/themes/logistics/news/2018-12-17-costs-of-eu-transport_en

directly generated transport costs. In other words, it can be concluded that the 'society pays' principle prevails over the 'the user pays' and 'the polluter pays' principles. This mismatch between external and infrastructure costs, on the one hand, and taxes and charges levied, on the other, is one of the main reasons for the persistent inefficiencies in the transport system. The enactment of efficient and cost-reflective pricing in transport, as acknowledged back in the Commission's 2011 White Paper, will be key to incentivising more efficient transport, while enabling consumers and industry actors to make informed purchase and investment decisions.

However, it is difficult to enforce government tax reforms aiming to implement the user-pays and polluter-pays principles, given that they can result in a disproportionate burden for the working and middle classes, as manifested in the case of the yellow vest movement in France. Transport and logistics already account for a significant share of company costs and household expenditures. For the latter, transport is the second-largest expenditure item, preceded only by housing costs. On average, each person spends €1900 on transport per year, which represents 13 percent of their spending. This calls for careful planning and design of fiscal policy measures to ensure social justice and public acceptance. While the optimal pricing strategy might vary from one country to another, dynamic- and means-based pricing models in particular have been shown to offer the least regressive and particularly effective design options for limiting congestion and maximising environmental benefits. These models rely on income-based discounts and/or exemptions for the lowest-income segments. In order to mitigate possible imbalances, the generated taxation revenue is directly returned to citizens through lump-sum rebates.

While successful examples can be observed at the national level (for example, the Swiss distance-based heavy-duty vehicle fee in force since 2001), an overarching EU framework and guidelines will be key to internalising costs while securing a level playing field across the continent. Only in a framework that fully promotes the 'polluter pays' and 'user pays' principle, can green modes such as rail have a fair chance to compete and fully play their role. Rail is today the only motorised transport mode to nearly cover its marginal costs.

An important EU legislative opportunity in the freight sector is the ongoing revision of the Eurovignette Directive on road charging, which, if adequately designed, can enable the fair and efficient use of road transport infrastructures and can moreover, help generate revenue for reinvestment in clean technologies and infrastructures. The Commission's legislative proposal for the reform takes us in the right direction by introducing distance-based charging (that is, km travelled) on the basis of CO_2 emissions, with the possibility of granting 75 percent reduced charges to low- and zero-emission vehicles. To promote modal shift, cross-financing greener infrastructure as railways with road tolls should be supported in the revision of the Directive.

The enactment of reduced vehicle taxation (circulation and registration), company car taxation as well as VAT rates, all of which fall within the remit of national governments, can be an effective though only temporary tool to lower the total costs of ownership associated with alternatively powered vehicles, thereby fostering their uptake. However, the picture remains highly heterogeneous across different countries due to the absence of an EU-wide framework.

Here, the long overdue revision of the Energy Taxation Directive (2003/96/EC) presents a unique opportunity to build a future-proof taxation framework for energy products and fuels with a view to providing correct price signals to consumers and promoting the shift to a clean and sustainable transport sector. Firstly, as the Commission already proposed back in 2011, a CO_2 component should be introduced in the new energy taxation rules. Another possible route to efficient pricing in transport would be the removal of the mandatory tax exemptions for aviation and maritime shipping fuels that the Directive currently provides for. The absence of taxation on conventional fuels used for air and maritime transport – two sectors with continuously growing emissions – directly contradicts the polluter-pays principle and stands in the way of fair intermodal competition.

On the aviation front, the removal of these mandatory tax exemptions for extra-EU flights would require amending existing bilateral and EU level agreements, as well as the Chicago Convention. The projected doubling in air traffic flows by 2035, as estimated by IATA, calls for a combination of measures to be considered ranging from the enactment of an aviation tax, increased production and uptake of sustainable aviation fuels, as well as further improvements in aircraft efficiency. In parallel, targeted

measures will be needed to ensure enhanced airspace efficiency within the Single European Sky, as well as improved efficiency of airport slot allocation system. Last but not least, the adoption of market-based measures such as the EU Emission Trading System (ETS) and CORSIA will play an important role.

While intra-EEA flights have already been included in the EU ETS, President-elect von der Leyen has proposed in her Agenda for Europe to extend the ETS to cover the maritime sector and reduce the free allowances allocated to airlines over time, as well as to incorporate the traffic and construction sectors (the latter being a sector whose CO_2 emissions are entirely exempted from EU regulation).

The European Commission's modal shift objectives rightly seek to divert more traffic away from road and towards rail and waterborne transport, given that these are by far the least polluting modes by weight transported. Zooming in to the maritime sector, while we have seen the uptake of innovative vessel technologies, there is still room for improvement, especially around port areas, which are often heavily populated. The removal of the above-mentioned unfair tax exemption could help encourage the deployment and use of shore power infrastructure in port areas, which could enable electric and hybrid ferries and ships to plug into the electric grid when at berth, thereby shutting off their engines and reducing harmful air pollutants in coastal areas. However, such measures would need to be accompanied by adequate financial support in order to avoid unintended consequences, such as an increased incentive to use more polluting modes such as road.

In more practical terms, tax matters require unanimity among national governments in Council. The modernisation of the EU energy taxation framework may require the Council to consider a move towards qualified majority voting as opposed to unanimity, as recently proposed by the Commission itself.

As highlighted above, a key challenge here will be to achieve the shift towards fair and efficient pricing with minimal or no regressive effects. In this respect, the challenge is to evolve in a socially just manner from unjust mobility practices towards a low-carbon, multi-modal mobility system, marked by higher shares of shared and public transport. To this end, internalisation techniques will need to be seen as part of a more comprehensive package of regulatory measures and accompanied by a systematic rethinking of mobility needs (both of which are discussed below).

A Regulatory Approach, Combining a Mix of Stick and Carrot Components, Will Be Needed to Secure Paris Agreement Compliance

As urged in the Commission's Long-Term Decarbonisation Strategy, a timely shift to highly efficient low- and zero-emission vehicles, such as electric vehicles, will be a key pre-condition to ensuring the transport sector is on track to delivering emission cuts in line with the 1.5°C target of the Paris Agreement. This requires the creation of a conducive regulatory and financial environment to accelerate their uptake, but importantly also implies a departure from the EU's current 'technology-neutral' regulatory approach.

Creating the right conditions for clean technologies to enter the market will depend – at least initially – on government policy, enacted at the European, national, and local levels, and combining a mix of stick and carrot components. Road transport is the most emitting mode, but it also holds the largest untapped potential for further decarbonisation thanks to technologically proven and cost-efficient solutions that are already available today. In its final year, the Juncker Commission made important advances in providing the 'stick' component for the shift to powertrains with low and zero emissions. In addition to putting an end to unregulated truck CO_2 emissions with the adoption of its first ever fuel economy standards for heavy-duty vehicles, the EU revised fuel economy standards for new cars and vans for the post-2020 period. Compliance with the new rules will require manufacturers to step up investments in the production and sales of highly efficient vehicles with low and zero emissions. Here, the recently revised Clean Vehicles Directive (2009/33/EC), which mandates the procurement of minimum shares of clean municipal and public service vehicles from 2025 and 2030, can play a key complementary role by providing the 'carrot' component for manufacturers while creating scale and reducing the costs of clean technologies.

However, as the Dieselgate scandal has taught us, the effectiveness of fuel economy standards is highly dependent upon the adequacy of the vehicle emissions testing regime and the accompanying enforcement measures. Guaranteeing that real-world emissions match

those reported on paper calls for the introduction of a real-world CO_2 emissions test, together with the creation of an impartial EU body to oversee vehicle type approval and ensure that data on fuel consumption and emissions is made publically available.

In light of the EU's new CO_2 and public procurement regulations, it is expected that the uptake of low- and zero-emission mobility will accelerate significantly in the post-2020 period. The growing penetration of electric vehicles and fuel cell vehicles (the latter being especially relevant for longer-range and commercial vehicle applications) will have to be met with adequate coverage of smart and interoperable recharging infrastructure for electricity and hydrogen. Here, a revision of the Alternative Fuels Infrastructure Directive (2014/94/EU) will be instrumental in setting binding targets for recharging stations while reflecting the advances in battery and high power recharging technology in the case of electric vehicles, as well as tailoring to the diversity of charging needs (depending on territory, population density, and power speed).

Sustainable urban mobility plans (SUMPs) are a key tool for encouraging planning for sustainable alternative fuel infrastructure with a view to promoting demand-driven rollout of charging infrastructure.[2] Railway stations and other public transport hubs in particular should be prioritised as prime locations for public charging points as these help to reduce the investment cost while supporting multimodality and improving connectivity between private and public transport. Furthermore, SUMPs should incorporate wider current and future technological developments, such as automation and ITS, MaaS, and shared mobility. These should be promoted together with Member States, which will then monitor the implementation by local authorities. National and municipal policies will be instrumental in enforcing parking restriction regulations, defining low-emission circulation zones, and enacting scrappage schemes. At the same time, however, municipal policies should not be disconnected from the cities' environment, in light of the growing (perceived) fragmentation of the EU internal market and haphazard barriers to the freedom of mobility. These currently affect even the most technologically advanced internal combustion engine (ICE) vehicles through uncoordinated urban/regional regulations, such as bans of ICE vehicles in Balearic Islands, and bans of diesel vehicles in certain cities, in 2025.

A Rethinking of Mobility Needs and Development of Smarter Mobility Concepts

In addition to being a central pillar of European integration, the transport sector has crucial economic and commercial significance for the Union, representing roughly 9 percent of the total gross value added of the EU economy and 9 percent of total EU employment, while enabling 17.2 percent of the EU's total exports, which depend on transport. With continuous trends of population growth and urbanisation, the transport sector will continue to play a key economic and commercial role. Reconciling this growth with the objectives of the Paris Agreement calls for a rethinking of mobility needs and the development of smarter mobility concepts.

As discussed above, the uptake of alternative powertrains will be central to keeping the transport sector in check with EU climate objectives. However, a technological shift alone will not suffice in addressing issues of congestion. In view of this, the foreseen evaluation of the 2011 White Paper is a welcome opportunity to further refine the existing paradigm, which sets that "curbing mobility is not an option". In parallel to the uptake of low- and zero-emission solutions across all transport modes, additional measures will be needed to foster multimodality, as well as behavioral change towards greater reliance on cleaner, shared, and active mobility.

Since the optimal solution will vary from country to country, a combination of measures will need to be considered in parallel, ranging from the development of public transport, car sharing infrastructure, bicycle lanes, and light rails. Enabling modal shift offers a multitude of environmental benefits, while helping to offset capacity issues at some airports, but it will require public authorities, rail companies, as well as airlines and airports to work closely together to develop high-speed train links between key cities where traffic volumes justify it, and boosting investments to improve infrastructure and frequency. Further measures related to passenger rights, and integrated multimodal ticketing will need to be considered to facilitate further uptake. Decarbonising EU transport requires a shift to clean transport like rail. Low- and increasingly zero-carbon rail is currently the most advanced green mode of motorised transport and

2. Drawing on best practices of Amsterdam, Oslo, and London

must be enabled to fully play its role as backbone of the digitalised and seamless multimodal system.

Last but not least, a more efficient organisation of the entire mobility system will be needed, which relies on digitalisation, data sharing, and interoperable standards. These will be instrumental in enabling smart traffic management and increasingly automated mobility in all modes, reducing congestion and increasing occupancy rates. In this respect, and as highlighted in the previous section, digitalisation holds enormous potential in reducing transaction costs and enhancing the complementarity and even substitutability of the different transport modes.

Moving Towards a Cross-Sectoral Regulatory Approach

The attainment of seamless multimodal door-to-door mobility has been stressed as a clear priority on the EU policy agenda. Having declared 2018 as the "Year of Multimodality", the Juncker Commission has, in the past year, put together a number of legislative and policy initiatives relating to better infrastructure, connections, incentives, and digital solutions, with a view to promoting the shift towards a fully integrated, multimodal, and sustainable transport sector.

However, transitioning from concept to reality requires the creation of favorable conditions for transport users, which includes the availability of "multimodal ticketing and payment systems". In practical terms, this means that the purchase of tickets in one go would enable passengers to travel using different transport modes provided by numerous operators. As this definition implies, an integrated ticketing system relies on the close collaboration of multiple players on the execution of a number of steps throughout the whole lifecycle of the value chain. More importantly, and as stressed above, it may also imply a departure from the EU regulation that has so far tended to take a sector-specific approach, towards an increasingly cross-sectoral and intermodal regulatory approach. Such an overarching EU framework may be needed for multimodal transport especially in cross-border contexts.

A Sustainable Financing Taxonomy Will Be Needed to Guide Investments In Environmentally Sustainable Mobility

Last but not least, the financial sector will inevitably have a central role to play in supporting the shift towards sustainable and climate-resilient transport sector. An important milestone of the Juncker Commission was the recent publication of its guidelines laying out the foundation for a future EU legislation on a taxonomy – or, in other words, a common EU methodology – for the assessment and identification of 'environmentally sustainable' economic activities. This is key to enabling well-informed investment decisions, safeguarding investment security, and putting an end to greenwashing practices.

A key challenge in developing the taxonomy will be to strike the right balance among width, depth, and flexibility. In other words, the taxonomy would have to have a sufficiently wide scope in terms of covering all relevant sectors of the economy and to significantly contribute to the transition to climate neutrality, at the same time as ensuring a sufficient level of detail to accommodate sector-specific, or even mode-specific particularities in the case of all modes of transport. In addition, the methodology should be dynamic enough to reflect continuous market and technology developments. Not least, the taxonomy should reflect short- vs. long-term considerations. This is particularly important in the context of infrastructure investments, which are often carbon-intensive in the construction phase, yet deliver substantial emission reductions in the long run.

While a sound taxonomy is of course an important step, it will need to be accompanied by adequate oversight and enforcement mechanisms in order to prevent greenwashing, on one hand, and double-counting practices seeking to artificially inflate the CO_2 mitigation potential and overall environmental performance of given technologies or projects, on the other hand. In parallel, we need to see a timely phasing out of environmentally harmful subsidies and an enactment of cost-reflective pricing across all transport modes. Lastly, appropriate spending of public finances is key, but these alone will not suffice. Private investment needs to be tapped into, by placing sustainability criteria needs at the core of the financing chain. The EU taxonomy will direct capital flows to the most sustainable transport modes, something that could be further supported by way of fiscal incentives.

QM-AX-19-020-EN-N

Florence School of Regulation, Transport Area
Robert Schuman Centre
for Advanced Studies

European University Institute
Via Boccaccio, 121
50133 Florence
Italy

Contact:
FSR-Transport:
fsr.transport@eui.eu

Robert Schuman Centre for Advanced Studies

The Robert Schuman Centre for Advanced Studies, created in 1992 and directed by Professor Brigid Laffan, aims to develop inter-disciplinary and comparative research on the major issues facing the process of European integration, European societies and Europe's place in 21st century global politics. The Centre is home to a large post-doctoral programme and hosts major research programmes, projects and data sets, in addition to a range of working groups and ad hoc initiatives. The research agenda is organised around a set of core themes and is continuously evolving, reflecting the changing agenda of European integration, the expanding membership of the European Union, developments in Europe's neighbourhood and the wider world.

FSR Transport

The Florence School of Regulation (FSR) is a project within the European University Institute (EUI) focusing on regulatory topics. It works closely with the European Commission, and is a growing point of reference for regulatory theory and practice. It covers four areas: Communications and Media, Energy (Electricity and Gas), Transport, and Water.
The FSR-Transport Area's main activities are the European Transport Regulation Forums, which address policy and regulatory topics in different transport sectors. They bring relevant stakeholders together to analyse and reflect upon the latest developments and important regulatory issues in the European transport sector. These Forums inspire the comments gathered in this European Transport Regulation Observer. Complete information on our activities can be found online at: fsr.eui.eu

With the support of the
Erasmus+ Programme
of the European Union

doi:10.2870/235645
ISSN:2467-4540
ISBN:978-92-9084-741-0